

Claims:

1. A composite material comprising:
 - a fiber-reinforced resin layer part including a plurality of fiber-reinforced resin layers in different fiber arrangement directions, the layers being laminated with each other;
 - a metal layer made of a structural metal material, which is disposed between the fiber-reinforced resin layer parts; and
 - a resin layer which attaches the metal layer and the fiber-reinforced resin layer part to each other.
2. A composite material according to Claim 1, wherein
 - the metal layer is made of shape-memory alloy; and
 - the resin layer and the fiber-reinforced resin layer part are laminated on the metal layer to which a strain is previously imparted.
3. A composite material according to Claim 1, wherein
 - the fiber-reinforced resin layer part is composed of n sheets of fiber-reinforced resin layers; and
 - the fiber-reinforced resin layers are laminated such that a minimum angle between the fiber-reinforced resin layers in a fiber arrangement direction is $180/n$ degrees.
4. A composite material according to Claim 1, wherein the fiber-reinforced resin layer part includes:
 - a first fiber-reinforced resin layer in which fibers are arranged to extend perpendicular to a certain direction of the metal layer;
 - a second fiber-reinforced resin layer laminated on the first fiber-reinforced resin layer, in which fibers are arranged to extend at an angle of -45 degrees relative to a certain direction of the metal layer;
 - a third fiber-reinforced resin layer laminated on the second fiber-reinforced resin layer, in which fibers are arranged to extend along a certain direction of the metal layer; and
 - a fourth fiber-reinforced resin layer laminated on the third fiber-reinforced resin layer, in which fibers are arranged to extend

at an angle of 45 degrees relative to a certain direction of the metal layer.

5. A method of manufacturing a composite material comprising the steps of:

imparting a strain to a shape-memory alloy foil;

laminating a resin layer on each surface of the shape-memory alloy foil;

laminating a plurality of uncured fiber-reinforced resin layers on the resin layer;

securing both ends of the shape-memory alloy foil to prevent a length of the foil from being changed; and

heating the shape-memory alloy foil to cure the resin layer and the fiber-reinforced resin layers.